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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/550,962	04/17/2000	Akihiro Yamashita	MAT-7947US	1642

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EXAMINER

ABDULSELAM, ABBAS I

ART UNIT	PAPER NUMBER
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2674

DATE MAILED: 07/25/2003

110

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/550,962

Applicant(s)

YAMASHITA, AKIHIRO

Examiner

Abbas I Abdulsalam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-15 and 18-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-15 and 18-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-2, 4-15 and 18-30 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2 and 4-15 and 18-30 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Iwasa et al. (USPN 5978403) in view of Kawanami et al. (USPN 6333599) and Shino et al. (USPN 6195075).

Regarding claims 1, 5, 9, 18 and 21, Iwasa teaches the arrangement of LED and displaying devices. See col.11, lines 21-27. Iwasa teaches a matrix wiring of an anode wire (2), and a cathode wire (3) arranged in multiple numbers. See col. 7, lines 23-30. Iwasa teaches the arrangement of light emitting laser with multiple anode wiring and the application of voltage V2 to the cathode wires (n8 to n14) as well as the connection of current flowing to the anode wiring. See Fig 7, Fig 11 and col. 10, lines 1-6 and col. 13, lines 30-33. Furthermore, Iwasa teaches the

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time dependance of the current in simulated matrixing along with pattern of current flowing with respect to time elapsed. See col. 14, lines 59-67, and Fig 15. Iwasa also teaches "m.times.n" laser array required for charging and discharging the capacitance of wiring in different cases. See Fig 10. Moreover, Iwasa teaches a photosensitive material drum (40) and a charger for charging the photo sensitive material drum. See col. 15, lines 35-47 and Fig 16. However, Iwasa does not teach a mechanism for discharging the stored charge from electroluminescence elements. Shino on the other hand teaches induction of main discharge between anodes and cathodes that is done through the discharging of the writing charge stored in the dielectric layer. See the abstract. Furthermore, Shino establishes the relation between the discharge current I_d and luminance B as plotted by the curve B shown in Fig. 6.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify Iwasa's display system to adapt Shino's discharging technique and discharging pattern as shown in Fig. 6. One would have been motivated in view of the suggestion in Shino discharging from the dielectric layer along with discharging vs. luminance graph (Fig. 6) equivalently provide the desired discharging mechanism. The use of discharging pattern as it relates to luminance helps function a plasma display device as taught by Shino.

In addition, Shino teaches the positive charge being accumulated in the face of dielectric layer (23) during a writing period $W1$. See col. 11, lines 51-6, Fig 1, 8 and 9. Shino's Fig 6 shows a relation between discharge current and luminance on one hand and a relation between discharge current and illumination efficiency on the other hand for plasma display device. See col. 7, lines 1-

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5. As indicated on the graph shown in Fig 6, the relation between discharge current I_d , and luminance B was plotted by a curve and one of ordinary skill in the art would have ascertained that the curve crosses luminance axis at some point making the discharge current value zero. See col. 10, lines 55 and Fig 6. Furthermore, Shino teaches the discharge time of different values with respect scanning and sustaining discharge current values and one of ordinary skill in the art would have ascertained the desired discharge time as it relates to discharge current from the plot in Fig 23. See Fig 23(a, b).

Iwasa does not disclose setting a discharge time, R_t before light emission of the EL elements to a time R_t , determining discharge time, T_x before light emission of EL elements in order to obtain luminance L_p of the EL elements such that $L_p \geq 0.9 \times L_e$, $T_x \leq R_t$, where L_e is a luminance of light emitted by the EL elements storing substantially no electrical charge.

Kawanami on the other hand teaches the measured time variation of the discharge current and manipulation of discharge time T_d in terms of minimum and maximum discharge currents as shown in Fig. 7(A). Kawanami also discloses improving the efficiency of luminescence by making a time at which the maximum discharge current to appears close to the time at which the maximum efficiency of luminance appears. See col. 8, lines 33-52, and Fig 7(A-B).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify Iwasa's display system to adapt Kawanami's time variation of a discharge current and time variation of the efficiency of luminance as represented in the plots, Fig. 7A and 7B respectively. One would have been motivated in view of the suggestion in Kawanami that

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manipulatable discharge time, T_d would provide the desired discharge time, T_t and the desired luminance level. The use of time variation of both discharge time and luminance helps function a plasma display system more effectively as taught by Kawanami.

Regarding claims 2 and 19, Shino teaches multiple anodes and cathodes forming strips.
See col. 5, lines 1-6.

Regarding claims 4, 6-8, 9-13, 14, 20, and 22-30, Shino teaches the determination of maximum value luminance, power and current. See col. 15, lines 65-67. In addition, Shino teaches a relationship between discharge current and luminance on the one hand and a relationship between discharge current and illumination efficiency on the other hand. See Fig 6. Shino also teaches the sustaining discharge as it relates to varying time. See Fig 14.

Further, Kawanami teaches the discharge current as a function of the discharge time, T_d . See the abstract. It would have been obvious that the variable discharge time T_d , can be used to satisfy the desired equations and inequalities.

Regarding claim 15, Shino teaches a plasma display device for image display on TV, advertisement display boards etc. see col. 1, lines 13-15.

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Conclusion

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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4. Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Abbas Abdulsalam** whose telephone number is **(703) 305-8591**. The examiner can normally be reached on Monday through Friday (9:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard Hjerpe**, can be reached at **(703) 305-4709**.

Any response to this action should be mailed to:

Commissioner of patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314

Hand delivered responses should be brought to crystal park II, Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology center 2600 customer Service office whose telephone number is (703) 306-0377.

Abbas Abdulsalam

Examiner

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REGINA LIANG
PRIMARY EXAMINER